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ABSTRACT

This description of career education activities in Prince George's County, Maryland, was prepared as part of a study conducted to identify evaluated, exemplary career education activities which represent the best of the current career education programs and practices referred to in Public Law 93-380. (See CE 018 212 for the final report of this study.) This document describes one of the ten projects that were selected from among 250 projects submitted. It presents one locale's way of successfully implementing a career education activity, the results of which are educationally significant. Each of the ten projects is described in terms of project overview; program development; materials and activities; parent and community involvement; staffing and management; costs; evidence of effectiveness; and conclusions. The ultimate goal of the particular project reported here was to implement in each junior high school a successful team approach to career education based on four aspects of career education (academic activities, individualized student activities, guidance activities, and exploratory on-the-job or simulated work experiences). The primary subjects are identified as junior high school administrators, counselors, teachers, and students, and the evaluation design is described as a pretest-posttest design using treatment and control group students. (BM)

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FOSTERING A TEAM APPROACH TO CAREER EDUCATION

Prince George's County Public Schools

Upper Marlboro, Maryland

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30 June 1978

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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FOREWORD

This activity description was prepared as part of a study conducted by the American Institutes for Research (AIR) under contract No. 300-77-0303 to the U.S. Office of Education. The purposes of the study were to identify evaluated, exemplary career education activities; to recommend identified activities to the Joint Dissemination Review Panel (JDRP) of the Education Division, Department of Health, Education, and Welfare; to prepare descriptions of identified activities; and to develop a handbook with six models for evaluating career education activities.

The criteria established for screening activities in this study intentionally limited choices to those whose evaluation reports presented evidence of effectiveness. Close attention was given to the soundness of evidence in evaluation reports. A minimum requirement for this evidence of effectiveness was that some comparison standard be provided so that gains made by the students participating in the activity could be attributed to the impact of the activity. After confidence in the evidence of effectiveness was established, further criteria were applied. These criteria included consistent relationships between a well-planned assessment of needs, a statement of desired student outcomes, the selection of instruments, and the procedures used in data collection, management, and analysis.

This document describes one of ten projects that was selected from among 250 submitted. It presents one locale's way of successfully implementing a career education activity, the results of which are educationally significant. Although the description reflects an activity developed in response to local needs, other school districts with similar needs may wish to adapt parts or all of it according to their own circumstances and philosophy.

We are especially grateful to the staff of the Prince George's County project and to the many school staff members who generously gave their time to answer questions from AIR site visitors. They extended a special kind of hospitality and spared no amount of effort to provide the information necessary to prepare this description. They made it possible for the site visitors to see the program in action, as well as to understand the philosophy and strategies that underlie its operations.

The instructional procedures in the Prince George's County project were judged to be free of bias with regard to race, sex, age, income levels, and type of occupation. However, where bias was found in some commercial materials, staff were trained in how to focus on that bias as a means of showing students ways to detect discrimination in printed materials.

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APPENDICES

Appendix A: Sample Section of Detailed Recommendations of the "Joint Committee for the Improvement and Expansion of Career Education"

Appendix B: Fifteen Local Items That Were Added to the Assessment of Career Development (ACD)

PROJECT OVERVIEW

TITLE & LOCATION: Fostering a Team Approach to Career Education
Prince George's County Public Schools
Department of Career Education
Upper Marlboro, Maryland 20870

TYPE: Staff Development

PROJECT DIRECTOR: Theresa Gushee
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SETTING: This project served junior high school administrators, counselors, and teachers in Prince George's County, which is one of the 12 largest school districts in the country. Its student enrollment is over 145,000, with 35,000 enrolled in the county's 41 junior high schools. The racial/ethnic composition of the county is 75% white, 23% black, and 2% other.

STAFF: One full-time county level staff person directed and coordinated career education staff development for all 41 junior high schools in the county.

GOAL: The goal of staff development was to implement in each junior high school a successful team approach to career education. Successful implementation of the team approach was determined by assessing its impact upon students.

EVALUATION DESIGN: The impact of the team approach upon students was assessed in 1975-76 by testing treatment and control students at the beginning (pretest) and again at the end of the school year (posttest).

MATERIALS: Staff development materials used in the five-day summer workshop covered four aspects of career education: (1) academic activities, (2) individualized student activities, (3) guidance activities, and (4) exploratory on-the-job or simulated experiences.

COST: The major cost items were coverage of teacher's time spent in the five-day summer workshop, the project director's salary, and career education "student" materials supplied to each school. The total budget for two years was $193,970.

PROJECT DESCRIPTION

PROGRAM DEVELOPMENT

Prince George's County is a large school district that has experienced a pressing need to redirect the education of its 145,000 students. Across the county, the competitive job market required competencies that graduating students generally did not possess. The school authorities desired to make the school system's learning opportunities more congruent with the increasingly complex and stringent demands of society; however, meeting this need in such a large school district was a major undertaking. The question at issue was how to go about it in an economically feasible way.

This report describes Prince George's County's answer at the junior high school level which was to train existing staff in a team approach to career education.

Relation of the Activity to the Target Population

Prince George's County borders Washington, D.C. and encompasses a population of about 675,000. The county encompasses a wide range on nearly every demographic dimension. Its unique feature is its proximity to Washington, D.C. and the unusually high dependence of its working population on government-related jobs. According to the 1970 census data, almost 40% of the working population were employed in government jobs. The median family income in the county was slightly above the national median with about 55% of the families in the income range of $10,000 to $25,000. One-fourth of the families received less than $10,000 annual income. The county's school system serves approximately 145,000 K-12 students. Per-pupil expenditure for the K-12 school programs was $1,680, excluding transportation.

The career development needs of the county's public school students do not differ greatly from those of students in other large school districts. Youth unemployment is higher than that of other age groups. Upon leaving school, youth discover a complicated world for which they do not feel adequately prepared. Many who apply themselves to the task of finding a job are frustrated in their efforts. The task which confronted the public schools in Prince George's County was to prepare a very large number of students with the following: (1) positive attitudes, (2) effective decision-making skills, and (3) information about self in relation to the world of work. Such a major undertaking required careful study and planning.

Identification of Needs

The task of specifying career education needs of students was undertaken by a Joint Committee for the Improvement and Expansion of Career Education, which included representatives of the county public school system and the county Chamber of Commerce. The Joint Committee's efforts resulted in specific recommendations appropriate to Prince George's County. A sample of the detailed recommendations is shown in Appendix A. The Committee's recommendations were designed to acquaint both staff and students with business-labor-industry in the county by:

- bringing community resources including speakers and job-related literature into the classroom;
- providing field trips, work experiences, and placement programs for students; and
- preparing students with marketable skills for personally satisfying work.

Program Planning

Prince George's County Public Schools responded enthusiastically and assertively to the Committee's recommendations. Administratively, the county organized a Career Education Department at the county level. The department is responsible for career education, including vocational education, throughout the school program including adult, evening, and summer school.

The county's philosophy has been to develop career education as a concept to be infused or woven into English, social studies, science, mathematics, foreign language, vocational education, and other existing courses. Career education by design is not a separate segment of the curriculum, a separate program, or a separate enclave of professional staff at the school level. Because this approach to career education involves all currently existing instructional departments, the Department of Career Education (essentially an enlarged and refocused Vocational Education Department) was placed in the County Division of Instructional and Pupil Services.

A "prevocational" concept was used in planning the career education program at the junior high school level. It represents a period of career development when students are seriously exploring careers for the purpose of narrowing their interests and making tentative career decisions. This was a practical activity that prepared students to make wiser course selections in high school. The constraints that were placed upon the prevocational, junior high level component

were severely limiting relative to the size of the task. There were 41 junior high schools in the county, all of which required infusion of career education activities into their existing curricula. However, available funds to carry out the infusion process were very limited.

A cooperative study was undertaken by the County Department of Career Education and the Maryland State Department of Education. Early in the study it became apparent that a solution involving new staff in expensive new programs was not financially feasible. The solution had to be achieved through development of current school staff, and that staff development effort had to be engineered and executed by existing county level staff.

The cooperative study resulted in a plan for developing a flexible team approach to career education within each junior high school. The minimum team within each school would include one academic teacher, one vocational teacher, and a counselor. Beyond this minimum, a team could include administrators, additional teachers, and parents. Each team would be equipped to implement four aspects of career education: (1) academic activities, (2) individualized student activities, (3) guidance activities, and (4) exploratory on-the-job or simulated work experiences. The focus of the team approach was to coordinate these four aspects instead of having isolated and independent career education activities occurring in each classroom. The teams would receive training during a five-day summer workshop and necessary support throughout the school year from the county staff.

Every junior high school in the county was to have a small group of staff persons trained to assume responsibility for: (1) fusing occupational information into the existing curriculum; (2) providing counseling which focused on decision-making skills and which viewed career choice as a developmental process; (3) providing information and instruction related to educational planning for the next educational level; (4) designing real or simulated, work-related experiences for the student; and (5) arranging exploratory experiences through industrial arts, home economics, business, and horticulture in schools where these components were available.

Project Goals and Objectives

The Prevocational Program focused on all students, but with special consideration for those students who, upon leaving high school, would enter the work force. The goals of the program were to assist students in making educational plans for high school that were realistic and appropriate and that were consistent

with the current job market. Specific objectives included the following:

At the end of ninth grade, students are expected to be able to:

- Explore at least 10 of the 15 career clusters as defined by the U.S. Office of Education.
- Discuss occupational entry levels, working conditions, educational and training requirements, employment outlook, and related notions.
- Use the counseling service which focuses on decision-making skills and views career choice as a developmental process in which the student is making a continual series of choices.
- Cite illustrations of the interdependence of a work-oriented society, worker responsibilities, traits and contributions.
- Display habits that are successfully transferred to a work-oriented society, such as puntuality, good attendance, and completing a task.
- Prepare correctly:
    a. social security application,
    b. work permit,
    c. job application, and
    d. a simple resume.
- Relate exploratory, one-the-job or simulated experiences to the curriculum areas covered such as carpentry to math, sales to communications, and further to relate these to their own strengths and weaknesses.
- Prepare an educational plan for high school that reflects knowledge of self in relationship to a broad career area.

It was not the purpose to implement a rigid set of procedures. This was considered neither possible nor desirable in 41 different schools throughout the county. There was no program to be implanted in each school; rather, each school team was expected to plan and then implement its own version of career education in a way that would produce a measurable impact upon its students. In other words, the objectives were written in terms of student outcomes.

The staff development activities suggested the team approach as the structure for each school. They also provided a process for school level planning with the help of suggestions, models, and materials to stimulate the planning. Finally, the staff development activities provided flexibility and support.

Measurement of Achievement

The Assessment of Career Development (ACD) was selected as the measure of student outcomes. The ACD is a theory-based, validated, and commercially available instrument. The following five student outcomes were assessed by the ACD:

- Knowledge of occupational characteristics;
- Knowledge of what is required to prepare for occupations;
- Experience in exploring occupations;
- Knowledge about how to plan a high school program relative to a career as well as when and how to make career education decisions; and
- Involvement in career planning.

Source of Funding

A proposal was written and funds were obtained from the Vocational Division of the Maryland State Department of Education which administered Federal Vocational Education Part B funds for the state. Funding started in July 1974, in time to prepare and conduct summer workshops for the 1974-75 school year.

MATERIALS AND ACTIVITIES

Project Design

Staff training was achieved through week-long summer workshops for all participants with follow-up support from the county staff and inservice workshops held in each school during the school year. The materials used in the summer workshops were developed in four pilot schools. Each pilot school selected a different one of four components designated as essential to a team approach. The four components were:

- Infusion into academic courses,
- Individualization to serve the needs of each student,
- Guidance provided by classroom teachers, and
- Opportunities in the community for exploratory, on-the-job experiences.

The approach developed by each pilot school became a model for presentation at the summer workshop. The purpose of each model was to stimulate ideas to assist each school in developing its own team approach.

Materials Developed in the Pilot Schools

The four components developed in the pilot schools were integrated into a suggested approach for consideration by the teams which represented the 41 junior

high schools at the summer week-long workshops. A brief description of each of the four components is presented in this section, prefaced by a discussion of the goal statements that guided each school's team in planning its own four components. It was this common set of career education goals that created a unifying theme to the four components in all 41 schools.

The five goals are as follows:

- Career education must motivate the students to become actively involved in their own educational planning through exploration. They must be convinced that they play an important role in the learning process.
- Career education must help students become aware of the responsibilities of citizenship, a vital part of which is to be gainfully employed.
- Self analysis and an appreciation of the skills, interests, and attitudes of others can come from widely-varied career-related experiences and can be transferred to a work-oriented society.
- Involvement of the school with the community is necessary in order to provide career exploration and awareness experiences for students.
- Career education must help students to acquire knowledge of the attitudes, influences, and forces that determined America's growth so that they are better prepared to cope with rapid change and to anticipate the future.

Component 1: Infusion into Academic Courses. The pilot school developed a team-teaching approach involving social studies teachers, industrial arts teachers, and counselors working together on the same team. The unit is entitled "High Volume Fabrication -- Present and Future." This unit is particularly well adapted not only to team planning and coordinated instructional activities but also to actual team teaching because the unit includes traditional content from both courses. This is shown in a sampling of introductory activities presented below:

- The teacher defines industrial arts as a study of industry and technology.
- The teacher leads a discussion on the questions, "What is industry?" and "What is technology?"
  - Industry: A system by which materials, tools, machines, human ability, and knowledge are organized and utilized for the purpose of changing man's life and environment.
  - Technology: The utilization of materials, tools, machines, and human abilities and knowledge for the purpose of changing man's life and environment.
- The teacher identifies and explains the categories of industry.

- Service industries
- Manufacturing industries
- Etc.

The students examine products, see slides and films, and visit a high volume fabrication industry. Then they organize a corporation as a class activity. They develop product ideas and select a product. While preparing a prototype, they also conduct market research. They identify lead-time activities and begin to develop the management structure to carry out the activities. As they move through the activities they build up a vocabulary of technical business terms.

When a social studies teacher and an industrial arts teacher join two classes for two periods of team teaching, they acquire both the manpower and the time required to carry out such an extensive operation. The activities are varied enough for the counselor to help individual students to identify slots that try out their skills and check the genuineness of their interest. Students learn how individuals can win positions that they want in a large business organization. Students also learn the necessity for afterhours detail work under the stress of "deadlines."

Component 2: Individualization to Serve the Needs of Each Student. The pilot school that developed this model had already organized a career resource center. For this model, it devised an individualized system of career exploration in the resource center. Over the duration of the school year, participating students are scheduled for 36 hours in the center, which they call a "career lab." Student activities in the career lab are managed in that school by the social studies program.

The students are given a list of 12 activities to complete during the year. Each activity earns the student a certain number of points toward course credit in career exploration. The first two activities are to complete the "Kuder Preference Record" and the "Hall Occupational Orientation Inventory." The former is an interest inventory and the latter a personal characteristics inventory. A student earns 10 points for satisfactory completion of each activity. After these two have been completed and discussed with one of the teachers or a counselor, the remaining activities can be done in any order:

- Filmstrips (16 points): From a list of available filmstrips, students must select at least four to view and summarize. Each summary must meet specifications of the English teacher.
- Films and Television Tapes (10 points): Students pick at least two films and one videotape to view and summarize as these are shown at the school

over the course of the year. The English teacher determines whether quality criteria for the written summaries were met.

- Want Ad (5 points): The student selects a newspaper ad for a job opening and writes the type of job advertised, a job description, the salary or wages, the name of the employer, the employer's address and phone number, and any required skills and qualifications (if the information can be found in the ad).

- Applications for Employment (10 points): For this activity the student chooses an application form, reads it thoroughly, and then fills it out. The information written in the application may be either about the student or about the student's parents.

- Junior College View Deck (10 points): This exercise is done for practice and experience whether or not students plan to go on to college. The View Deck provides step-by-step procedures for narrowing the choice of two- or four-year college programs down to one or two. Then the student goes to the college yearbook and prepares a written description of the selected colleges.

- SRA Occupation Exploration Kit (10 points): The Science Research Associates (SRA) kit provides a system by which students can discover occupations that are appropriate to expected level of schooling, ability with words, ability with numbers, and interests. Students read Occupational Briefs of selected occupations and fill out a worksheet. If students decide to improve their English or math grades, they can find out what additional occupations might become open to them.

- Interest Survey (10 points): The Interest Survey is a written report of any occupation that interests the student. There are nine points required to be covered in the report.

- Occupational View Deck (10 points): This is a system similar to the College View Deck and it is used in about the same way to select several occupations.

- Careers: Chance or Choice - The Washington Post (5 points): This is a pamphlet that describes unusual occupations. The student must choose one to read and then summarize it.

- Periodicals (5 points): From a list of 35 periodicals, students read and summarize two articles.

All ninth grade students participate in a Career Day near the end of the school year. Representatives of about 40 occupations are present at school on that day and each student chooses four to visit. Each student is given 35 minutes alone or in a small group with each of the four representatives. Of the choices, students choose at least one area in which they are totally unfamiliar.

The students are given additional options that do not earn points. These leisure time activities are intrinsically motivating as well as instructional. They include career games, Career Comic Books and sources of hard-to-find information about strange careers. Constructive use of leisure time is an objective of career

education; therefore, this activity is just as important in the individualized system as are the point earning activities.

Component 3: Guidance Provided by Classroom Teachers. The guidance aspect was developed in another pilot school where the focus was on personal and social characteristics of individuals that help or hinder a person in obtaining and holding a job. The students identify minimum competencies such as knowing the meanings of basic terms and being able to use the terms correctly. They also learn how to complete a written application form completely, accurately, and neatly. Students learn what employers expect of employees and how they identify those qualities during an interview. In the pilot school, students attended a separate career guidance class where the students were encouraged to examine their strengths and weaknesses in relation to job tasks; however, the activities that were developed could be used by teachers in their regular academic or vocational classes, with the assistance of a guidance counselor.

Component 4: Opportunities in the Community for Exploratory, On-the-Job Experiences. This aspect was typically the responsibility of vocational teachers. Through the team approach, such experiences were expanded to highlight the applicability of academic skills to everyday activities in most jobs.

Inservice Training

Inservice training consisted of week-long summer workshops for all participants. The workshop was the major staff development activity; however, follow-up support activities and additional inservice workshops held in each school during the school year were essential to successful implementation in the schools. There were 156 participants in the summer workshops during the first summer. Two separate workshop sessions were required to accommodate them. The second year there were 132 participants, also accommodated in two one-week workshops.

The central feature of each workshop week during the first year was the small group training session. The first day was spent on orientation activities which included getting acquainted with county staff and learning more about career education in general. Beginning the second day, sessions centered on the four aspects of the team approach. The participants learned what had been developed by the teachers from the pilot schools and which parts of each aspect had proven most workable. This was following a period of discussion and idea-sharing. The latter part of the week was devoted to actual planning sessions by members of each school's team. These were interspersed with sessions devoted to specific academic and vocational subject areas and practical steps for infusing career edu-

cation into each area.

During the workshop week, each team applied the ideas and the trial-and-error lessons of the pilot schools, as well as input from consultants, to its own situation. All four aspects were incorporated to some degree in each team's plan. What the teams devised for themselves differed across schools depending upon unique constraints and varying degrees of readiness. Some schools reorganized their class schedules so that team members could combine their classes and teach together. Other teams coordinated instruction topics so that learning activities in one class would be reinforced in another. For example, social studies teachers might focus on aspects of society that use the skills being taught in a vocational class. This would be further reinforced by field trips and exploratory, on-the-job experiences planned in both classes.

Inservice training during the school year included two scheduled one-day workshops in each school. If requested, a workshop would be designed to provide training for additional teachers who wanted to join the team or to form a new team. The workshops also presented new instructional materials, additional community resources, and suggestions for enhancing the team approach.

STAFFING AND MANAGEMENT

No new staff members were added for this activity, either at the county or at the school level. The entire emphasis was on guiding and assisting existing staff. It must also be pointed out that no new courses were added, no special time periods set aside for students to study career education, and no subgroups of students designated as the target populations. Instead, management of this activity involved existing courses usually in their existing time frames and it involved all students as the target. The key word was refocusing, that is, giving a new perspective to what was already there. In Prince George's County, the image to be refocused was the instructional process and educational content. The process of refocusing involved a shift away from independent and isolated teaching and a shift towards a team approach. The content refocusing involved conveying to students the career and occupational implications of existing course content.

County Staff

One staff member in the County Department of Career Education, who was assigned full-time at the junior high school level, directed this project. Her responsibility was to initiate and coordinate the prevocational career education

activity in all junior high schools. Her specific functions included: (1) providing supportive services and technical assistance to school level guidance and instructional personnel; (2) working with school staff, parents, and the business community to provide opportunities for students to see and experience the "inside" of local jobs; and (3) designing the evaluation and carrying it out. The required qualifications of the person filling this job included:

- administrative and supervisory skills;
- communication and human relations skills;
- ability to cross disciplinary specialties and to help create an interdisciplinary setting;
- knowledge of contemporary learning theory, instructional methodology, and guidance and counseling; and
- training and/or experience in curriculum development and evaluation.

Recruitment of School Staff

Recruitment of school staff was aimed at developing in each school a nucleus team representing, at a minimum, an academic department, a vocational department, and the counseling department. The team at each school was selected from among volunteers. To qualify, a teacher was required to attend a one-week summer workshop, make a commitment to the team approach, and promise to schedule at least 10 hours to field trips over the course of the school year.

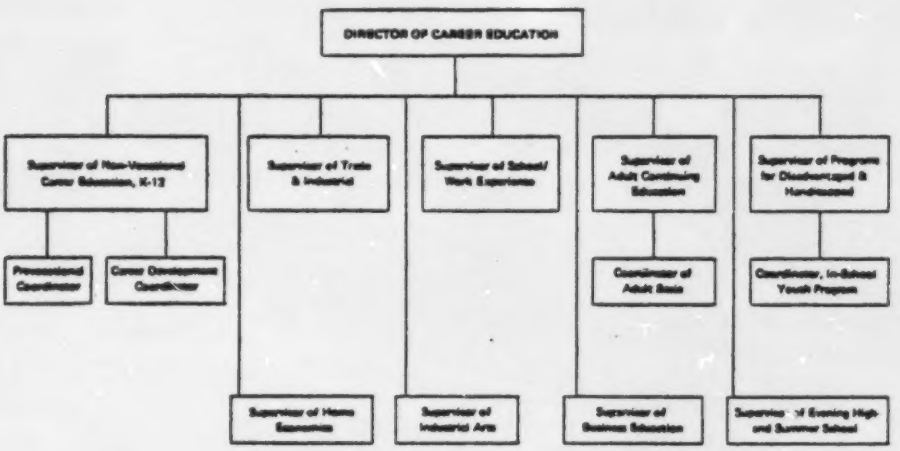
The largest school team during the first full year of this activity was nine staff members including an industrial arts teacher, a social studies teacher, three counselors, a librarian, an administrator, an English teacher, and a language and history teacher. The most prominent academic subject represented among volunteers was social studies. Vocational teacher volunteers included home economics and business in addition to industrial arts teachers. Staff were notified through a bulletin to all junior high school principals requesting the nomination of participants, one from each of the following three areas: (1) academic, (2) vocational, and (3) guidance, as well as an administrator in charge of curriculum, if possible.

Management Strategies

The organization behind the management of this staff development activity was designed to make career education a systematic and natural developmental experience for students K-12. Consequently, a Department of Career Education

was formed under the administrative direction of the Assistant Superintendent for Instruction and Pupil Services. The organizational structure of the Department of Career Education is shown below.

Department of Career Education



As shown, the Director of Career Education was responsible for the Supervisor of Non-Vocational Career Education (K-12), all the vocational career education supervisors, the Supervisor of Adult and Continuing Education, and the Supervisor of Career Education Programs for Disadvantaged and Handicapped. The Prevocational Coordinator, who directed the staff development activity presented here, was a staff member of the Non-Vocational Career Education sub-unit. Thus, the Prevocational Coordinator was concerned with implementing the team approach that integrated non-vocational with vocational career education at the junior high school level. The integrative function and the organizational structure behind it were extremely important relative to the transition of youth into productive and rewarding occupational and educational pursuits at the high school level.

The Prevocational Coordinator was charged with the job of integrating career education at the junior high school level with what goes before at the K-6 levels and what comes after at the 10-12 levels and beyond. The Prevocational Coordinator was pivotal in encouraging cooperative efforts among vocational and academic teachers.

The Prevocational Coordinator was given autonomy at the junior high school level but, of course, was accountable to her immediate supervisor and higher level administrators. The autonomy was a matter of necessity due to the size of the county, the large number of schools involved, and the limited number of county staff members. In actual practice, all three staff members of the non-vocational group worked closely together as colleagues and all three worked toward building strong working relationships with the vocational supervisors.

The Prevocational Coordinator had one primary contact person at each school. That contact person was one of the members of the prevocational team and was primarily responsible for facilitating communications between school-based staff and central office staff with special concern for keeping the pre-vocational team members informed. They also requested staff inservice when they felt the need.

Schedule of Activities

The chart below presents the schedule of major activities supervised by the Prevocational Coordinator over the two-year period required for its development, implementation, and evaluation.

Schedule of Major Activities
1974-75 & 1975-76

First Year

Fall	• Prepare project plan • Develop pilot activities in cooperation with staff interested in implementing them
Winter	• Implement pilot activities • Notify school principals about project • Obtain volunteers to serve on the Prevocational Team in each school
Spring	• Designate Prevocational Coordinator in each school • Team members sign-up for summer workshops • Summarize results of pilot activities and incorporate in workshop agenda
Summer	• Develop workshop details • Hold workshops

Second Year

Fall	• Administer pretests to students
	• Implement team approach in each school
	• Provide consultation as needed
	• Hold first follow-up in-school workshop in each school
Winter	• Continue consultation as needed
	• Hold second follow-up, in-school workshop in each school
Spring	• Administer posttests
	• Assess effectiveness of the effort

COSTS

The overall costs of the project are shown in the chart below. These too would likely be quite different in other districts due to differing numbers of personnel involved, salary levels, distances traveled, and so on. As can be seen in the chart, approximately one-fourth of the costs of this project were represented by materials and equipment purchased for schools. An adopting district probably would not have to buy a complete set for each of its schools because many schools already have some of these materials in their resource centers and libraries.

Overall Costs

	First Year	Second Year
County (district) staff (coordinator, secretaries, and clerks)	28,500	36,000
Stipends to teachers for summer and follow-up workshops	41,100	21,200
Instructional equipment and materials	39,770	22,550
Printing	300	300
Office Supplies	300	250
Office Equipment	1,500	
Mileage	1,200	1,000
Annual Total	112,670	81,300

EVIDENCE OF EFFECTIVENESS

Ten of the 41 junior high schools were randomly selected for formal evaluation of student outcomes. In each of the ten schools, a ninth grade social studies teacher, a vocational education teacher, and a counselor participated in the study, although other staff may have attended the workshop and participated in the prevocational component without being part of this study. Ninth grade staff were selected because, in the first year of the project, activities were furnished on the ninth grade level at all schools, while they could not be provided on all grade levels to all schools. Social studies was selected because it was the non-vocational course area from which teachers were most likely to volunteer to participate. The assumption made was that the example set by a teacher committed to the prevocational goals would be an effective stimulus for diffusion of commitment and participation by academic teachers throughout the school. The participating staff, in cooperation with the school administrators, worked out scheduling and procedural matters necessary to identify a treatment and a control class. Neither remedial nor gifted and talented classes were considered. The county staff was assisted by an external statistical consultant in designing and conducting the evaluation.

Measurement Instrument and Procedures for Testing

A standardized, commercially available instrument, Assessment of Career Development (ACD), was selected because it assessed the outcomes of interest in this project and because of a unique feature of the instrument. That feature was the option of adding local items to the instrument and having them administered and scored along with the original test. The fifteen items that were added by Prince George's County are presented in Appendix B.

The following five scales of the ACD were used in assessing the outcomes of this project:

- Knowledge of Occupational Characteristics. The ACD Occupational Characteristics scale assesses knowledge of duties associated with various occupations; psychosocial aspects of occupations such as working conditions, work schedules, and job values; worker attributes associated with specific occupations; and others.

- Knowledge of Occupational Preparation Requirements. This ACD scale assesses students' knowledge of the amount and type of training/education associated with various occupations.

- Exploratory Occupational Experiences. This ACD scale is not a test of knowledge but rather a form for recording experiences and activities. It measures students' involvement in experiences related to activities

typical of about 200 occupations. Items measure student involvement in formal experiences such as extracurricular school activities, part-time jobs, community clubs, religious and service groups, etc., as well as involvement in informal experiences such as peer group activities, hobbies, pasttimes, etc. Students respond to 90 work-related activities and indicate: (1) No, I haven't done this; (2) Yes, I have done this, but only once or twice; or (3) Yes, I have done this several times.

- Career Planning Knowledge. In this scale, the ACD assesses students' knowledge of the career planning process which should aid the students in making intelligent and informed educational and career decisions during high school. The scale assesses knowledge of basic principles of career development and knowledge of opportunities such as educational training programs, financial aid, and labor market functioning and trends. In addition, it covers knowledge of the career planning process, such as when to start, how to proceed, and where to go for help.

- Career Planning Involvement. This ACD scale assesses a student's involvement in planning experiences available in the school and community both on a formal and informal basis. Thirty-eight items gather information concerning a student's information seeking activities, involvement in self-generated career exploratory activities, practicing of employment seeking skills, and making career plans.

The instrument was based upon career development educational objectives in the areas of occupational awareness, self awareness, and career planning. The test was normed in 1973 on a sample of 28,298 students, grades 8, 9, and 11, in 197 schools across the country. Reliability data were obtained on a 10% sample of the norm group; scale reliabilities ranged from .71 to .93.

The ACD was administered to treatment and control classes as a pretest in September 1975 and again in May 1976 as a posttest. In each school, the test was administered by a counselor or a classroom teacher who had received approximately three hours of workshop familiarization and training in the administration and usage of the ACD. Tests were scored and pertinent means and standard deviations were computed by the test publisher's scoring service.

Evidence of Impact

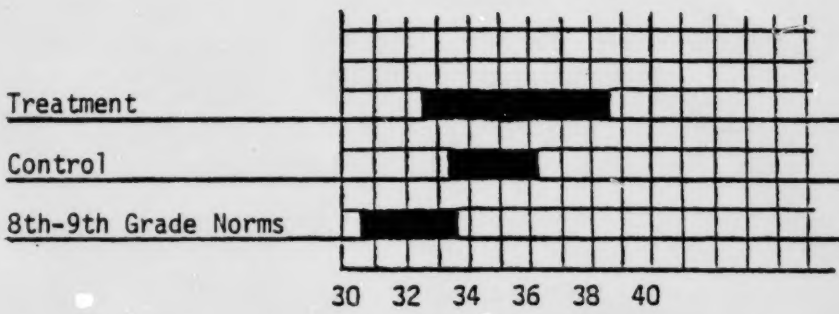
The treatment and control students were compared on each of the five ACD scales described above. The statistical significance of differences between treatment and control students' results were tested using a procedure recommended by J. P. Guilford.[1] In addition to comparing the results against the operation of chance, as is the case with the statistical tests employed, the group means

[1] Guilford, J. P. Fundamental Statistics in Psychology and Education. New York: McGraw-Hill, 1965, 173-177 & 194-197.

and standard deviations were examined in order to assess at least subjectively the educational significance of the treatment impact. For purposes of illustration, the chart below presents the results of the Knowledge of Occupational Characteristics ACD scale. These data show that the treatment group mean was 32.49 on the pretest of this 54-item scale and 38.45 on the posttest, a gain of 5.96 points. The control group gained 3.01 points.

Knowledge of Occupational Characteristics

(54 Items)



	Pretest		Posttest	
	M	SD	M	SD
Treatment	32.49	9.27	38.45	8.92
Control	33.17	8.72	36.18	8.45
8th-9th Grade Norms	30.59	9.08	33.42	9.33

The treatment group started lower and ended higher than the control group and the difference in gain between the two is statistically significant. The next question is whether the greater gain of the treatment group is educationally significant. This question does not have a definitive answer but the data are invaluable to those persons responsible for allocating limited resources to future educational efforts. In Prince George's County, the question was given a strong affirmative answer.

As simple numbers, a gain of six points does not appear large; however, that gain is nearly two-thirds of a standard deviation in this case as compared to both the control and norm groups, each of which gained roughly one-third of a standard deviation. Given that the program entailed no new staff and that the impact was felt in 41 schools, this was indeed an important educational contribution. This contribution is further enhanced when consideration is given to the fact that the treatment group outgained the control group on all five scales.

Review by Joint Dissemination Review Panel

The Joint Dissemination Review Panel (JDRP) was established by the Education Division of the Department of Health, Education, and Welfare in 1972.

The joint U.S. Office of Education - National Institute of Education (NIE) Panel currently has 22 members, eleven from each agency, appointed respectively by the Commissioner of Education and the Director of NIE. The JDRP meets periodically to review the evidence of effectiveness submitted for a wide variety of federally supported educational products and practices, with effectiveness being the sole criterion for approval by the JDRP. It is charged with the responsibility of ensuring that educational interventions - projects, products, or practices - have been shown to have positive impacts on their recipients before they are disseminated with federal funds or endorsed by the Education Division.[1]

In March 1978, the JDRP reviewed this project; they did not approve it for nationwide dissemination at this time. Differences between treatment and comparison groups in student performance on the criterion measure used by the project were sufficiently small in magnitude to raise concerns among the panelists that those differences were in fact educationally significant. The Panel suggested that there were needs for stronger evidence of project effectiveness and an evaluation design permitting unequivocal conclusions to be reached regarding impact of project activities on target students. This information is provided so that those school districts interested in adopting this project may have the advantage of the Panel's suggestions.

CONCLUSION

In Prince George's County, the prevocational project was considered to be highly cost effective because the only major costs were in the summer workshops and because all 41 junior high schools participated in project activities. Once a staff member completed a workshop experience, the expenditure for that staff person did not have to be repeated for the school system to continue to receive the benefits of such training. Thus, even though gains in student performance were small, Prince George's County concluded that it received full value for its investment.

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[1] Tallmadge, G.K. The Joint Dissemination Review Panel: IDEABOOK. Washington D.C.: NIE/DHEW, September 1977.

Appendix A

Sample Section of Detailed Recommendations of the "Joint Committee for the Improvement and Expansion of Career Education"

1. THE CONCEPT OF EXCHANGE PROGRAMS BETWEEN BUSINESS-LABOR-INDUSTRY PERSONNEL AND SCHOOL PERSONNEL

A. Current Activities:

1) A Junior Achievement program has been established in five county high schools through the efforts of Junior Achievement of Metropolitan Washington, Inc., the Prince George's Chamber of Commerce and the Department of Career Education.

2) Career development workshops were conducted in 1972, 1973, and 1974 which included dual participation on the part of business, industrial and community volunteers, as well as educators.

3) Business industry visitation programs featuring workshops hosted by members of the business community for educators were conducted in the Spring and Fall of 1974. These workshops were hosted at the various business sites and catered to teachers, counselors, administrators, and supervisors Kindergarten through Adult Education.

4) Goddard Space Flight Centers hosted junior high school guidance counselors and vocational education teachers in a four-week long exchange program, World of Work.

5) On-going participation by the business community in career programs and visitations at the elementary, secondary and adult education levels.

B. Recommended Activities:

1) Make an inventory of resource people with occupational skills who can give some time to teach in schools. The committee has designed a survey form which was sent to all county chamber members. Results of this survey will be made available to all schools in February 1975, in a publication, Community Resources: A Joint Effort.

2) Make an inventory of occupational skills possessed by school personnel that industry could use. Board of Education staff members are proceeding with this survey.

3) Identify the specific needs of schools or industry. This can be accomplished by analyzing results of above surveys.

4) Incorporate exchange programs between teachers and industry on a rotating basis for periods of time of at least a week. This program can be put into effect when the needs of industry and teachers are determined from the surveys.

5) Make use of the school maintenance department for practical work experience for both students and teachers for a minimum period of a week, full time.

6) Establish an evaluation procedure for each program for the purpose of determining its effectiveness.

Appendix B

Fifteen Local Items That Were Added to the Assessment of Career Development (ACD)

Directions: These items are here to gather additional information of interest to your local Career Guidance Program Administrators.

Choose the answer to the following which best describes you or your goals as you see them right now.

1. Do you have a pretty good idea of what occupation or career you want to get into?

   A. Yes
   B. No
   C. I haven't thought much about it

2. If you answered "yes" to question number 1 above, how sure are you at this time that that is what you really want to do?

   A. Not very sure, right now I'm very confused
   B. Somewhat sure, but not definite
   C. Fairly sure, but I could change my mind
   D. Very sure, I doubt that I will change my mind

3. Who has given you the most help with the problem of deciding what you want to do after you finish school?

   A. Your parents
   B. Your friends
   C. Your teachers
   D. Your school counselors
   E. Other, who? _____

4. How much better prepared to make occupational or career plans are you today than you were one year ago?

   A. None
   B. A little bit
   C. Somewhat
   D. A lot

5. I feel efforts to help me begin to think about career plans should begin in

   A. Grade School
   B. Middle School
   C. Junior High School
   D. High School
   E. College, Business or Vocational School

6. Which of the following best tells how you feel about making an occupational or career choice?

   A. I need a lot of help
   B. There is plenty of time before I have to worry about that
   C. I have, or just about have, made a choice, but I didn't need much help
   D. I have, or just about have, made a choice, but I needed and got a lot of help

7. Someone should have a fairly good idea of the occupation or career you plan to go into by the time they

   A. Enter Junior High School
   B. Enter High School
   C. Graduate from High School
   D. Graduate from College, Business or Vocational School

8. Even though I put down a job family choice on another part of this test I feel pretty sure I will spend most of my life

   A. As a homemaker
   B. In the military

9. When I get to High School my present plans are to enroll in a

   A. College Preparation Program
   B. Business Program
   C. General Program
   D. Vocational-Technical Program

10. For me the best way to learn in the classroom is by

   A. Reading books
   B. Listening to my teacher explain things
   C. Watching movies and film-strips
   D. Doing the things we are talking about

11. How many times would you say you have asked your school teachers, counselors, librarian, principal, etc. for information about jobs or careers during the past year?

   A. Never
   B. 1-5 times
   C. 6-10 times
   D. 11-15 times
   E. 16-20 times
   F. 21-25 times
   G. More than 25 times

12. Fifteen years from now I feel sure I will be earning

   A. Less than $5,000/year
   B. $6,000 to $10,000/year
   C. $11,000 to $15,000/year
   D. $16,000 to $20,000/year
   E. $21,000 to $25,000/year
   F. $26,000 to $30,000/year
   G. $31,000 to $35,000/year
   H. $36,000 to $40,000/year
   I. More than $40,000/year

13. How many vocational-technical programs (courses) do you know about right now?

A. 1 or 2
B. 2 or 3
C. 4 or 5
D. 6 or 7
E. 8 or 9
F. 10 or 11
G. 12 or 13
H. 14 or 15
I. More than 15

14. In order to get a "good" job today you have to go to college.

A. Yes
B. No

15. How much has taking this test changed the way you have been thinking about your future?

A. Not at all
B. A little
C. Somewhat
D. A lot